

We claim:

1. A method for constructing a particle filter in a microelectromechanical system, the method comprising:

depositing and patterning a plurality of alternating layers of filter forming material and sacrificial material on a substrate material to form at least one filter bottom and at least one filter wall; and

removing the sacrificial material to release the at least one filter bottom and the at least one filter wall to define a particle trap between interfacing portions of the filter bottom and filter wall.

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2. The method of Claim 1 wherein the at least one filter bottom and filter wall are interconnected by at least one support feature.

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3. The method of Claim 1 wherein the step of depositing and patterning the plurality of alternating layers of filter forming material and sacrificial material comprises:

forming a filter top including at least one etch release aperture.

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4. The method of Claim 3 wherein the filter wall encloses an area circumscribing the at least one etch release aperture.

5. The method of Claim 1 comprising:

patterning the filter bottom into a predetermined one of a plurality of geometric configurations.

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6. The method of Claim 1 wherein the particle trap comprises:

a gap of pre-determined dimension formed between mating but non-interconnected portions of the filter bottom and filter wall.

7. The method of Claim 6 wherein the filter wall at least partially circumscribes a top portion of the filter bottom to define the particle trap.
8. The method of Claim 7 wherein the filter wall overlaps the top portion of
5 the filter bottom to form the gap between mating but non-interconnected portions of the filter bottom and filter wall.